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VIA ELECTRONIC FILING

April 18, 2019

Marlene Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 201154

Re: ***Ex Parte* Notification**

ET Docket No. 18-295, *Unlicensed Use of the 6 GHz Band*; and

GN Docket No. 17-183, *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*

Dear Ms. Dortch:

On April 16, 2019, Russell Fox of Mintz and I met with Will Adams, Legal Advisor to Commissioner Carr and on April 17, 2019 we met separately with William Davenport, Chief of Staff & Senior Legal Advisor to Commissioner Starks; Erin McGrath, Legal Advisor to Commissioner O'Rielly; and Umair Javed, Legal Advisor to Commissioner Rosenworcel. We discussed the above-referenced proceedings and distributed the attached presentation.

We commended the Commission on the release of the Notice of Proposed Rulemaking ("NPRM") in which the Commission proposes to make the 5925-7125 MHz band (the "6 GHz band") available for unlicensed services. We reiterated the importance of this proceeding for the American public – Wi-Fi Alliance's previously released *Spectrum Needs Study*[1/] demonstrated that additional capacity is required to meet immediate needs and the 6 GHz band is uniquely suited to help meet those demands. We highlighted the recently-released Cisco VNI Mobile Report that shows the increasing dependence of wireless carrier traffic offloaded to Wi-Fi with each successive technology generation.[2/] That means that Wi-Fi will be required to support an ever-higher portion of an expanding demand for wireless data connectivity. We noted that Wi-Fi Alliance plans to introduce its Wi-Fi 6 certification program[3/] to support the next generation of

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1/ Wi-Fi Alliance, *Spectrum Needs Study* at p. 23, Feb. 2017, available at https://www.wi-fi.org/downloads-registered-guest/Wi-Fi%2BSpectrum%2BNeeds%2BStudy0.pdf/33364

2/ Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017–2022**,** White Paper at p. 18, Feb. 2019 available at https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-738429.pdf.

3/ *See* Wi-Fi Alliance, *Wi-Fi Certified 6 Coming in 2019*, Press Release, Jan. 8, 2019 available at https://www.wi-fi.org/news-events/newsroom/wi-fi-certified-6-coming-in-2019.

Wi-Fi connectivity – technology that will perform optimally in the wider bandwidths available in the 6 GHz band.

We stressed the importance of the Commission permitting the use of low power indoor ("LPI") devices across the *entire* 6 GHz band. Limiting LPI devices to two disjointed spectrum segments, totaling less than a third of the 6 GHz band's spectrum, will restrict urgently needed spectrum capacity, channel availability, and bandwidth. More fundamentally, there are no bases on which to preclude LPI operations in any portion of the 6 GHz band. Wi-Fi Alliance's comments in this proceeding have highlighted the many reasons LPI operations will not create harmful interference to incumbent users.[4/] The scenarios suggested by others[5/] under which harmful interference may occur are simply extreme-corner cases.

We asserted that for non-LPI installations, the Automatic Frequency Coordination ("AFC") that will be used in connection with unlicensed 6 GHz use will fully protect incumbent operations. The rules governing AFCs should promote flexibility and technology neutrality so long as the AFC achieves the essential function of identifying channels that may be used for unlicensed use. AFCs would rely on the Commission's Universal Licensing System, which incumbent and future licensees are already obligated to keep current.

Finally, we noted that the Commission need not take regulatory action with respect to ultra-wideband devices when it permits further use of the 6 GHz band by unlicensed devices. That equipment, like Wi-Fi devices, operates under Part 15 of the Commission's rules, which states that certification of equipment does not provide rights to use any given frequency and that operators of unlicensed devices must accept interference from, among others, other devices operated under Part 15.[6/]

* * * *

Pursuant to Section 1.1206(b)(2) of the Commission's rules, an electronic copy of this letter is being filed in the above-referenced docket. Please direct any questions regarding this filing to me.

Respectfully submitted,

/s/ Alex Roytblat

WI-FI ALLIANCE
Alex Roytblat
Senior Director of Regulatory Affairs
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Attachment

4/ *Comments of Wi-Fi Alliance*, ET Docket No. 18-295 at 11-15 (Feb. 15, 2019).

5/ *See e.g. Comments of Fixed Wireless Communications Coalition*, ET Docket No. 18-295 at 18-22 (Feb. 15, 2019).

6/ 47 C.F.R. § 15.5

cc: (each by e-mail, with attachment)
Will Adams
William Davenport
Erin McGrath
Umair Javed

Unlicensed Use of the 6 GHz Band

Alex Roytblat
Wi-Fi Alliance
April, 2019

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Wi-Fi – Integral Component of Telecommunications Infrastructure

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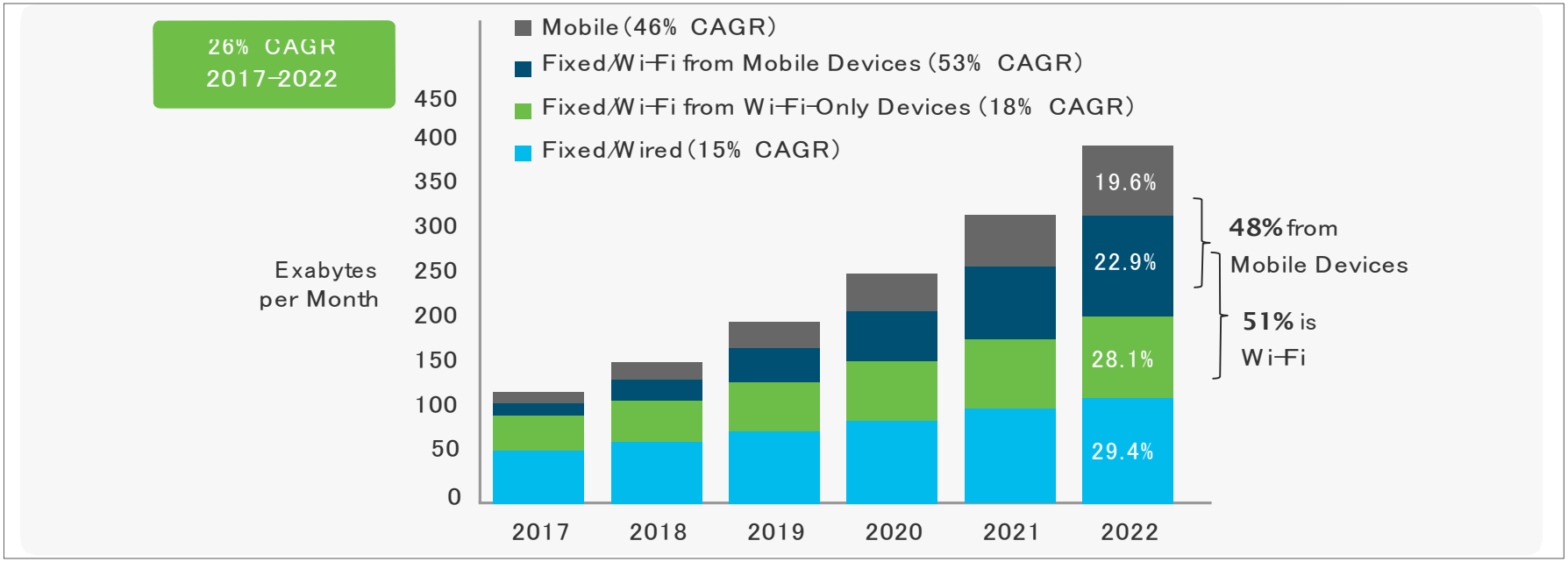
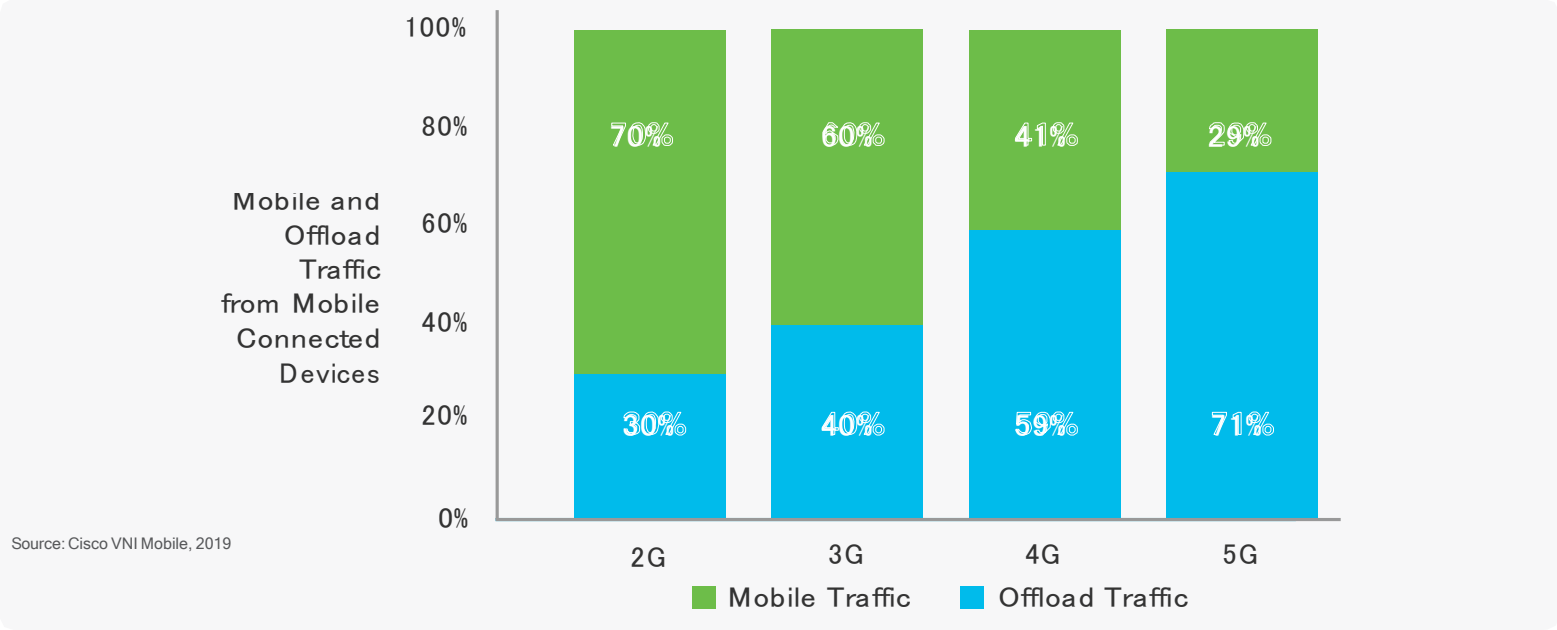
Wi-Fi – Integral Component of Telecommunications Infrastructure

- Wi-Fi supported applications: *video streaming, Wi-Fi calling, monitoring, hotspot access, automation, smart cities, rural broadband, AR/VR, IoT, roaming and many others*
- Wi-Fi delivers ***more than half*** of all Internet traffic



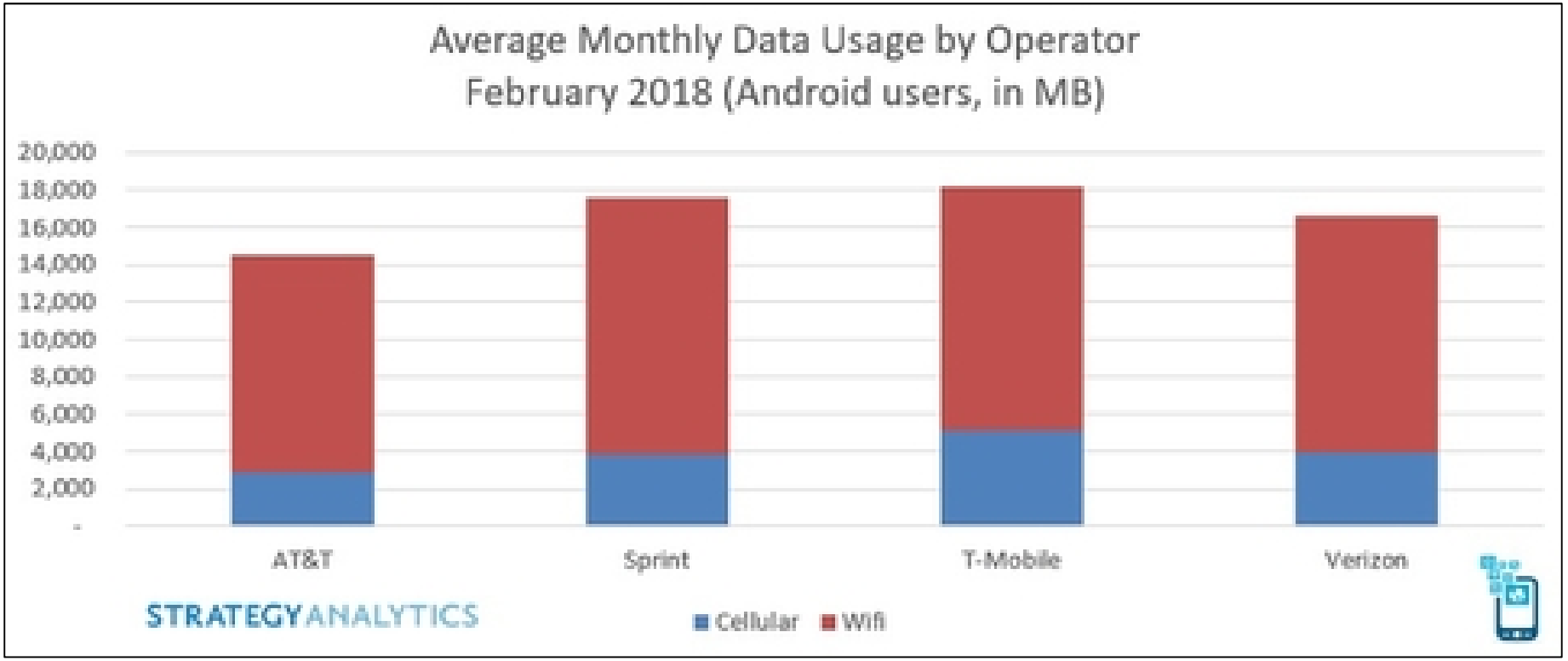
Wi-Fi – Integral Component of Telecommunications Infrastructure

- From 2G to 3G to 4G to 5G: Wi-Fi offload continues to grow
- More than previous generations, 5G rollout depends on Wi-Fi availability



Mobile Data Traffic and Offload Traffic, 2022

Wi-Fi – Integral Component of Telecommunications Infrastructure

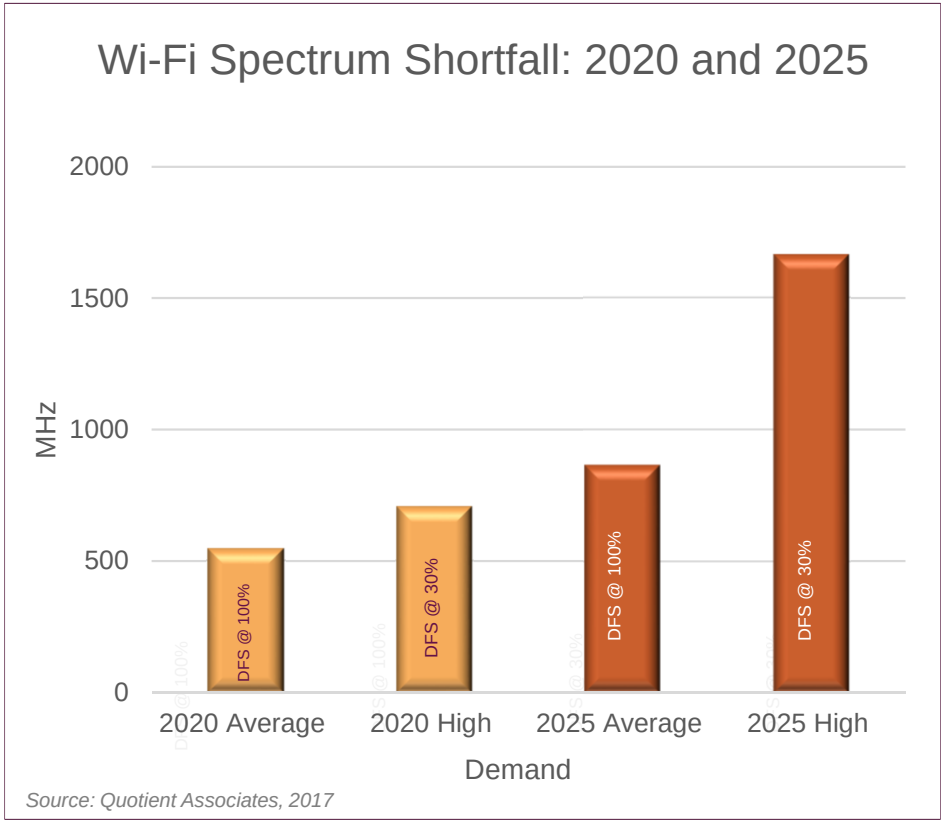


Growing Demand/Growing Spectrum Need

Proprietary | © Wi-Fi Alliance

Growing Demand/Growing Spectrum Need

- While Wi-Fi has evolved from a nascent technology to an integral component of U.S. telecom infrastructure, it still operates in limited spectrum that was made available almost two decades ago
- Next generation Wi-Fi (Wi-Fi 6) is designed to support higher data rates and low latency applications
  - Fiber to the home and 5G fixed wireless access will deliver 1Gbps, but what about the “last 50 feet”?
- Studies confirm***: currently available spectrum is insufficient to meet growing demand for Wi-Fi***
  - Wi-Fi Alliance Study



Source: Quotient Associates, 2017

Growing Demand/Growing Spectrum Need

- Spectrum congestion threatens Wi-Fi ability to support 5G and gigabit connectivity--regulatory action is needed to support Wi-Fi functionality
  - Wi-Fi 6 rollout is set for 2019 Q3
  - Wi-Fi 6 chipsets will surpass 1 billion by 2022 (ABI Research)
- 6 GHz spectrum is uniquely suited to support next generation Wi-Fi
  - Sufficient bandwidth to implement multiple and wider channels (*e.g.* 80/160 MHz)
  - Existing 5 GHz radios could be readily extended to cover the 6 GHz range
  - Good potential for global harmonization -- already allocated to mobile service worldwide
  - Unlicensed devices operating on non-interference basis (Part 15) must and will ensure full protection of incumbent licensed operations
    - Licensed services cannot coexist with 6 GHz incumbents

6 GHz Unlicensed Proceeding

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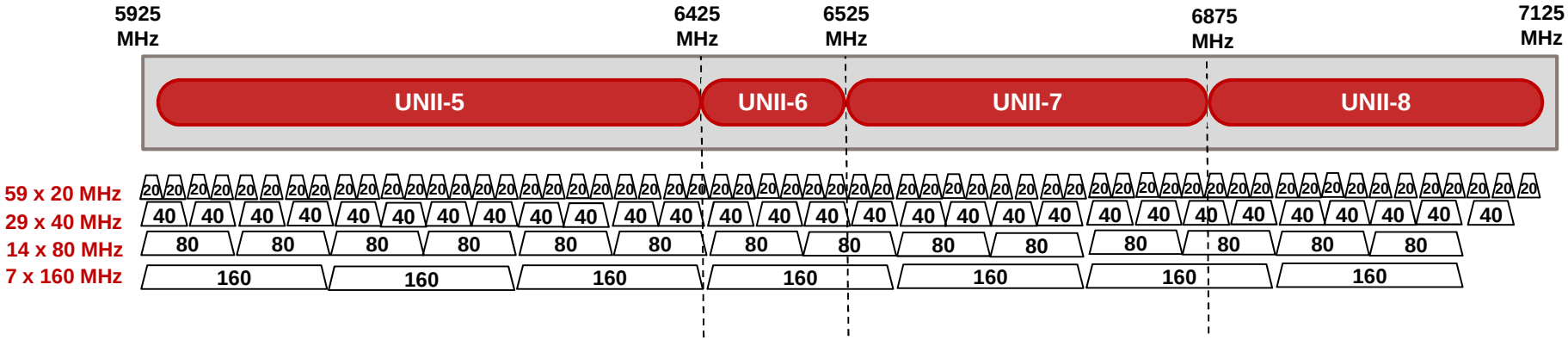
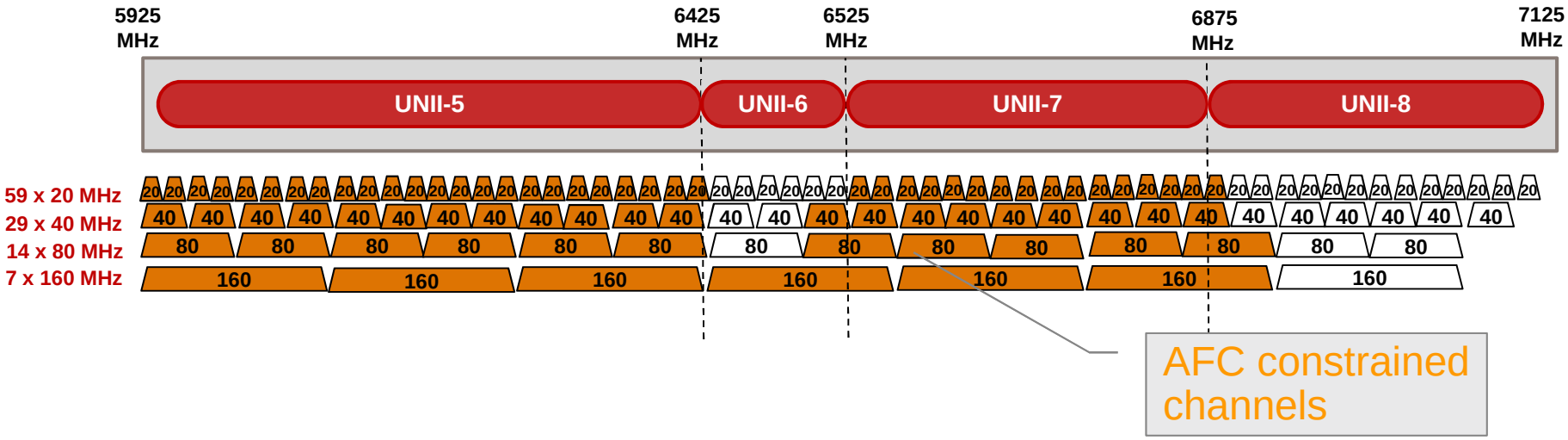
FCC’s NPRM: Unlicensed Use of the 6 GHz Band



- FCC’s 6 GHz unlicensed proceeding is the right action at the right time
  - Addresses Wi-Fi spectrum shortfall
  - Enables Wi-Fi to support gigabit data rates, broadband connectivity goals
  - Wi-Fi 6 rollout in 2019

FCC's NPRM: Unlicensed Use of the 6 GHz Band



- NPRM proposal fragments accessible spectrum/negates potential benefits:
  - UNII-5: Standard/Low-Power Indoor with Automatic Frequency Coordination (AFC)
  - UNII-6: Low-Power Indoor without AFC
  - UNII-7: Standard/Low-Power Indoor with Automatic Frequency Coordination (AFC)
  - UNII-8: Low-Power Indoor without AFC

FCC's NPRM: Unlicensed Use of the 6 GHz Band

- Low-power indoor-only transmissions in the U-NII 5 and U-NII bands 7 ***do not*** require AFC
  - Low-power indoor transmissions attenuated by:
    - Building entry loss
    - Clutter loss
    - Polarization mismatch loss
  - Interference potential is further mitigated by:
    - Multipath fading
    - Low Wi-Fi duty cycle (<1%)
    - Limited frequency overlap/low power spectral density
    - Low probability of U-NII deployment in fixed service link path
- Mandating AFC on low-power indoor devices operating in the U-NII 5 and U-NII 7 bands is contrary to the public interest --
  - No access to spectrum until AFC certified and available (*e.g.,* possibly for years)
  - Significant burden, cost and complexity

FCC's NPRM: Unlicensed Use of the 6 GHz Band

- AFCs utilizing ULS data will identify available channels for U-NII transmissions at a specific location
  - ULS must be actively managed to accurately document issued licenses and existing operations
- FCC rules and certification of AFC will ensure the functionality necessary to protect incumbent operations --
  - Rules should not mandate specific design -- flexibility and technology-neutral approach
  - Decentralized AFC approach minimizes complexity; reliance on FCC database makes AFC centralization unnecessary
  - Requirement for U-NII access point periodic recheck with AFC alleviates positive-control requirement
- Higher-gain antennas for Wi-Fi extend connectivity to rural and underserved areas
  - Deployments/frequency access will be managed with AFC
  - Wi-Fi easy-to-deploy and cost-effective